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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/936,257 | 01/11/2002 | Vladimir Ivanovich Kuznetsov | NEDER27.001APC | 2475 |

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| EXAMINER |
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KACKAR, RAM N

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| ART UNIT | PAPER NUMBER |
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1763

DATE MAILED: 03/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/936,257

Applicant(s)

KUZNETSOV ET AL.

Examiner

Ram N Kackar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 32-38 is/are allowed.
- 6) ☒ Claim(s) 22-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Election/Restrictions

1. Applicant's election of 22-~~3~~8 drawn to an apparatus is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 103

2 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3 Claims 22-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peter Frijlink (US 4860687) in view of Granneman et al (US 6183565).

Frijlink discloses a device for rotating disk type objects having smooth surfaces while floating on gas in a reaction chamber and further discloses gas introduction holes (Fig 5b) from a reference surface essentially perpendicular to it while the surface has spiral shaped grooves having origin in the center and exhaust at the periphery, the gas introduction holes at the origin of spiral grooves (Fig 5b and Col 6 lines 13-50) and gas discharge holes (Fig 6b).

Frijlink does not disclose top and bottom part to enclose the substrate, while both parts have gas introduction holes and only top part has pattern of grooves.

Granneman et al disclose a reaction chamber having a substrate enclosed in top and bottom parts while floating on gas emanating from both parts (Abstract and Fig 2).

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Regarding the presence of spiral grove only on one side, Frijlink discloses that the spiral grooves provide a component of flow, which provides a velocity component in the direction of rotation by viscosity. Clearly as far as this component is concerned it does not matter if the grooves are looking upward or looking downward as claimed. Therefore having grooves on the inside of top surface is only a rearrangement of parts and there fore obvious. *In re Japikse* 86 USPQ 70 (CCPA 1950). The other part of flow to provide flotation has been disclosed by Granneman et al.

Therefore it would have been obvious for one of ordinary skill in the art at the time invention was made to have both top and bottom parts emanate gas and optionally have grooves on one side for rotation so as to be able to control gas flows better for uniform and selective process conditions.

Regarding claim 26 Frijlink teaches that one of the parameters affecting the floatation and rotation of the object is the flow rate (Col 3 line 62), which depends upon the width of the groove. It would therefore be obvious to one of ordinary skill in the art to design the width and shape of the spiral grooves for optimum performance.

Regarding claims 30 and 31 controlling the speed is an intended use. Since Granneman et al as modified by Frijlink is same structurally as the invention inherently the rotation component and floatation component would be independent.

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Allowable Subject Matter

4 Claims 32-38 are allowed. Prior art discloses spiral grooves and grooves along segment of circle but fails to provide two inlets in each segment to control direction of rotation in the context of other limitations of claim 32.

Response to Amendment

5 Applicant's arguments filed 10/30/2003 have been fully considered but they are not persuasive. Applicant argues that Frijlink teaches that locating grooves on the bottom part is important because the force of rotation is due to viscosity of the flowing gas that contacts the bottom of the substrate. This assumption is incorrect since there is nothing in Frijlink to say that the force of viscosity will not rotate the substrate if applied on top of the substrate.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N Kackar whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 571 272 1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RK

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NU1763